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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 34563US1

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on April 17, 2006

Signature: [signature]

Typed or printed name: Steven J. Solomon

Application Number	Filed
10/672,247	September 26, 2003

First Named Inventor: Charles M. Milliren

Art Unit	Examiner
1771	Hai Vo

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [X] attorney or agent of record. Registration number 48719
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

[signature]
Signature

Steven J. Solomon
Typed or printed name

216-579-1700
Telephone number

April 17, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

- [X] *Total of _____ forms are submitted.

In the Office action, the Examiner reiterated her position that both Donzis and Krent disclose a viscoelastic foam. To support this position, the Examiner has cited two new references, namely "Information in Flexible Polyurethane Foam" and "Specialty Foam and Composites." The Examiner has argued that both of these references "evidence that viscoelastic foam is a type of open cell, flexible polyurethane foam which has ability of absorbing shock." Then the Examiner explains:

> This is exactly what is taught in the Donzis reference. Donzis teaches the use of the flexible open cell polyurethane foam for shock absorbing as shown in figure 9. Therefore, it is not seen that the flexible open cell polyurethane foam could not have been a viscoelastic foam so as to have ability to absorb shock as the viscoelastic foam of the present invention.

Office action, p. 4.

But this argument is flawed because it assumes that all open-cell flexible polyurethane foams that are capable of absorbing shock *must be viscoelastic foams*. This is simply not true. The vast majority of flexible polyurethane foams that have been on the market over the past several decades in fact are not viscoelastic; i.e. they do not exhibit slow-recovery following deflection. Instead, they are elastic (instant-recovery) foams that nonetheless are both flexible and capable to absorb shock. For an example based in common experience, the vast majority of sofa cushions are made with conventional elastic polyurethane foam that does not exhibit slow-recovery hysteresis. These are not viscoelastic, yet they are capable to absorb shock, such as when a child jumps on them face-first, lest children jumping on couches would suffer serious injury.

The Examiner's own reference, "Information in Flexible Polyurethane Foam," points out that viscoelastic foams have been very sparsely used, despite the availability of technology to make them. See the first page of that reference: "Although viscoelastic foam production technology has been available for more than 35 years, commercial products have only recently been made widely available to consumers."

Even assuming the newly cited references disclose certain viscoelastic open-cell flexible polyurethane foams, this does not mean that **all** open-cell flexible polyurethane foams are viscoelastic. In fact, the vast majority of such foams historically have been elastic (instant recovery). Turning to Donzis, it is true this reference teaches a foam core constructed of an open cell polyurethane foam (col. 4, lns. 63-64). But nowhere does Donzis disclose that foam is a

viscoelastic polyurethane foam. Quite the opposite, it is clear the foam core in Donzis is elastic and not viscoelastic. To understand this, reference is made to col. 6, lns. 40-52. Here it is explained "the rate at which air is drawn into cavity 76 [which houses the polyurethane foam core 78] and thus the rate at which the volume of the cavity increases, is again determined by the number and size of the apertures 80." Conversely, for a viscoelastic foam as-claimed, the rate of recovery would be determined not by the number of apertures 80 in the surrounding enclosure 74 alone, but also by the rate of recovery (slow-rebound recovery) of the foam core 78 itself. Were the core 78 viscoelastic foam, the total cushioning structure could not recover faster than the rate of recovery of the slow-recovering foam core 78. Because Donzis indicates the rate of recovery is governed by the number of apertures in the enclosure, and not the rate of recovery of the foam itself, clearly the foam in Donzis is not *necessarily* a viscoelastic foam. Nor does that reference fairly suggest using a viscoelastic foam, particularly considering "Information in Flexible Polyurethane Foam," cited by the Examiner, which points out how viscoelastic foams have been sparsely used.

The Examiner has made an identical rejection based on Krent. See Office action, p. 6, which uses nearly identical language to reject claim 1 over Krent as was used regarding Donzis. The very same arguments and reasoning as above apply equally to Krent. While it is true, as the Examiner has noted, Krent discloses an "open cell flexible urethane foam," col. 7, ln 7, nowhere in Krent is it disclosed or remotely suggested this foam is viscoelastic. Nonetheless, the Examiner has relied on the same reasoning as for Donzis to suggest the newly cited references, "Information in Flexible Polyurethane Foam" and "Specialty Foam and Composites," evidence that the open cell polyurethane foam in Krent must be viscoelastic. Again, for the same reasons as above, this simply is not so. The prior art does not disclose or suggest a viscoelastic foam in combination with a skin having a plurality of vent holes provided therein, as recited in claim 1.

Furthermore, the facts that elastic polyurethane foams are available and widely used, such as in the sofa-cushion example above, and are far more prevalent than viscoelastic polyurethanes (see "Information in Flexible Polyurethane Foam" quoted above), mean Donzis and Krent cannot be said to inherently require the polyurethanes in those references must be viscoelastic, absent some objective teaching in either of them to that effect. The Examiner has pointed to no such teaching, other than to compare the properties of being 'open-cell' and 'flexible' to two other references to suggest that the presence of these properties = viscoelastic. For reasons already

explained, this is not true.

The panel's attention is further directed to the detailed remarks contained in Amendment "A" of record, which further and in detail elucidate the reasons why Krent and Donzis do not anticipate claim 1.

Claims 9 and 31 also stand rejected as being anticipated by both Donzis and Krent on the same ground as in the prior Office action. That ground essentially is that if two foams are polyurethane and have the same density, and one of them is semi-rigid, then the other must be semi-rigid as well. More specifically, the Examiner has argued that because Dera evidences a semi-rigid polyurethane foam with a density of 2 to 7 lb/ft^3, and both Donzis and Krent disclose polyurethane foams having densities within the same or a similar range, then both Donzis and Krent must disclose semi-rigid polyurethane foam.

The Applicants have previously pointed out (in Amendment "A") that density is not *per se* related to rigidity. It was further pointed out in Amendment "A" that the Examiner's attempt to reconcile the contradictory teachings of Krent and Dera (former teaches a "flexible" foam, and the latter a "semi-rigid" foam) was incorrect, and actually proved the foams in the two references were not the same, despite the fact they had similar or overlapping densities. (The panel is respectfully referred to the argument beginning at the middle of p. 10 of Amendment "A"). Nonetheless, the rejection was maintained.

In fact, it is possible to produce two polyurethane foams having the same density, but vastly different rigidity. One of the inventors of this application has, in fact, prepared two such samples of polyurethane foam, one of which being flexible and the other being semi-rigid, but both having a density of about 6.5 pcf. The difference between these two samples in terms of rigidity is like night and day, despite the fact they have the same density. Applicants' counsel has offered to demonstrate these samples in person for the Examiner.

The fact is there are potentially thousands, perhaps millions, of different possible combination of polyols, polyisocyanates, catalysts, blowing agents and other components that can be used to prepare polyurethane foams, and numerous examples can be prepared having the same or similar density but vastly dissimilar rigidity. That two references (such as Krent and Dera) disclose polyurethane foams having similar density does not even imply they must have the same or nearly the same rigidity; one can be flexible while the other is semi-rigid or rigid.

In the interview summary mailed February 15, 2006, the Examiner appears to have

withdrawn from her prior position that density relates *per se* to rigidity, as she acknowledged the applicants' above argument is true. But then she stated in the interview summary this argument is not commensurate in scope with the claims because the claims do not specify a composition for the semi-rigid viscoelastic foam. Respectfully, this misses the point. Applicants' argument that two foams can have vastly different rigidity yet the same density is not meant to distinguish any particular foam composition from a claimed composition. The applicants have not claimed any composition. Rather, the argument is intended to point out a flaw in the Examiner's rejection, namely that just because Krent and/or Donzis may disclose a polyurethane foam having a density similar to one reported in Dera, this does not mean Krent's and/or Donzis's foam is semi-rigid like Dera's foam. Consequently, the Examiner's conclusion that Krent and Donzis both teach semi-rigid foams, just because they share common or similar densities with Dera, is patently false. The Examiner appears to have acknowledged this in the interview summary.

Because claims 9 and 31 are not limited to any particular composition for a semi-rigid viscoelastic foam, they embrace ***any*** semi-rigid viscoelastic foam when used in combination with the other structural elements in those claims. The applicant has disclosed at least one composition for producing such a foam, but others are known. The point is that the prior art knows of no structure wherein a viscoelastic foam is employed in combination with the other recited elements in claims 9 and 31, respectively. Therefore, this structure is patentable irrespective of the particular composition used to produce the foam in a particular example of the invention. It is the semi-rigid[1] and viscoelastic (slow-recovery hysteresis) properties of the foam, in combination with the other recited elements, that are important to the invention, and not necessarily the particular composition used to produce an example semi-rigid viscoelastic foam. The composition of the semi-rigid viscoelastic foam is not critical, so long as the resulting foam exhibits those properties. Another way to look at it is that applicants are claiming a protective layer having a certain type of foam (i.e. that has certain properties), ***not*** a composition of matter for the foam.

In summary, neither Krent nor Donzis discloses a semi-rigid foam. Nor is it correct to conclude these references must disclose a semi-rigid foam just because their foams may fall within the same or similar density range as Dera.

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[1] The "Information in Flexible Polyurethane Foam" reference refers to the rigidity of a foam as its 'firmness.'